U.S.Army Yuma Proving Ground

Installation Action Plan FY 2005

August 2004

Fiscal Year 2005

U.S Army Yuma Proving Ground

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Yuma Proving Ground

Arizona

Installation Action Plan

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Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year restoration program for an installation. The plan will define Installation Restoration Program (IRP) requirements and propose a comprehensive approach and associated costs to conduct future investigations and remedial actions at each Solid Waste Management Unit (SWMU) at the installation and other areas of concern.

In an effort to coordinate planning information between the IRP manager, Army Environmental Center (AEC), installations, executing agencies, regulatory agencies, and the public, an IAP has been completed for Yuma Proving Ground (YPG). The IAP is used to track requirements, schedules, and tentative budgets for all major Army installation restoration programs.

All site specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change during the document's annual review. Under current project funding, all remedies will be in place at YPG by the end of 2006.

The following agencies contributed to the formulation and completion of this Installation Action Plan:

ADEQ

Argonne National Laboratory

Engineering & Environment, Inc.

IMA, SWRD

Jason Associates

U. S. Army Environmental Center rep. by EEI

U.S. Army Yuma Proving Ground

Acronyms & Abbreviations

AEC	(United States) Army Environmental Center (formally called USATHMA)
AEDB-R	Army Environmental Database-Restoration (formally DSERTS)
AEHA	Army Environmental Hygiene Agency
ADEQ	Arizona Department of Environmental Quality
agt	above ground tanks
AOC	Area Of Concern
Argonne	Argonne National Laboratory
AST	Above ground Storage Tank
ATSDR	Agency for Toxic Substances and Disease Registry
BERA	Baseline Environmental Risk Assessment (includes ecological evaluation)
BRA	Baseline Risk Assessment (included human health evaluation)
BRAC	Base Realignment And Closure
CAP	Corrective Action Plan
CDH	Castle Dome Heliport
CERCLA	Comprehensive Environmental Response Compensation and Liability Act, as amended 1980
CHPPM	(United States) Center for Health Promotion and Preventive Medicine (formally called USAEHA)
COC	Contaminants of Concern
COPC	Contaminant Of Potential Concern
CRP	Community Relations Plan
CRTA	Cold Regions Test Activity
CTC	Cost to Complete
CWA	Chemical Warfare Agents
cy	cubic yards
DA	Department of Army
DERP	Defense Environmental Restoration Program (now called ER,A)
DEUR	Declaration of Environmental Use Restrictions
DD	Decision Document
DPW	Department of Public Works
DRMO	
DSERTS	Defense Site Environmental Restoration Tracking System
DTC	
EOD	Explosives Ordnance Disposal
EPA	(United States) Environmental Protection Agency
ER,A	Environmental Restoration, Army (formally called DERP)
FBTS	Fuel Bladder Test Site
FFA	Federal Facility Agreement
FFSRA	Federal Facility Site Remediation Agreement
FFS	Focused Feasibility Study
FS	Feasibility Study
FSP	Field Sampling Plan
ft	foot
ft^2	square feet
FWDA	Former Waste Disposal Area
FY	Fiscal Year
gal	gallon
gpd	gallons per day
GPI	Futierrez-Palmenberg, Inc.
GW	Groundwater
HRS	Hazard Ranking System
HWSO	Hazardous an Solid Waste Amendments

Acronyms & Abbreviations

IAP	Installation Action Plan
ICE	Internal Combustion Engine
IRA	Interim Remedial Action
IROD	Interim Record of Decision
IRP	Installation Restoration Program
IWTP	Industrial Wastewater Treatment Plant
K	$1,000
kg	kilograms
km	kilometers
LTM	Long Term Monitoring
LTO	Long Term Operation
MCL	Maximum Contaminant Level
mg	milligrams
MNA	Monitored Natural Attenuation
MRTFB	Major Range Test Facility Base
MTA	Mobility Testing Area
MW	Monitoring Well
NE	Not Evaluated
NFA	No Further Action
NPDES	National Pollutant Discharge Elimination System
NOV	Notice of Violation
NPL	National Priorities List
OB/OD	Open Burning / Open Detonation
OE	Ordnance Explosives
OU	Operable Unit
O&M	Operation & Maintenance
ORC	Oxygen Releasing Compound
PAH	Poly Aromatic Hydrocarbons
PA	Preliminary Assessment
POL	Petroleum, Oil & Lubricants
POM	Program Objective Memorandum (budget)
PP	Proposed Plan
PY	prior year
RA	Remedial Action
RA(O)	Remedial Action - Operation
RAB	Restoration Advisory Board
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
REM	Removal
RFA	RCRA Facility Assessment
RI	Remedial Investigation
RIP	Remedy in Place
RIWP	Remedial Investigation Work Plan
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
SAP	Sampling Analysis Plan
SARA	Superfund Amendments and Reauthorization Act
SI	Site Inspection

Acronyms & Abbreviations

SRL	state regulatory limits
SVE	Soil Vapor Extraction
SVOC	Semi-Volatile Organic Compounds
SWMU	Solid Waste Management Unit
TAPP	Technical Assistance for Public Participation
TPH	total petroleum hydrocarbons
ug/l	microgram per liter
USACE	United States Army Corps of Engineers
USAEHA	United States Army Environmental Hygiene Agency (now called CHPPM)
USATHMA	United States Army Toxic and Hazardous Material Agency (now called AEC)
VMF	Vehicle Maintenance Facility
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOC	Volatile Organic Compounds
YPG	Yuma Proving Ground
yr	year

Summary

STATUS

Non-NPL, RCRA Part B Interim Status Permit Application, Feb 2003
IRP SWMUs and non IRP SWMUs incorporated in application by reference

NUMBER OF AEDB-R SITES:

42 AEDB-R sites
6 Active ER,A Eligible Sites (receiving funds)
35 Response Complete

ACTIVE AEDB-R SITE TYPES:

2	Burn Areas	1	UXO Area
1	Fire/Crash Training Area	3	Contaminated Buildings
2	Contaminated Soil Piles	2	Chemical Disposal
2	Disposal Pit/Dry Wells	5	Leachfields
3	Firing Ranges	1	Industrial Discharge
4	Landfills	2	Maintenance Yards
2	Pesticide Shops	1	Washrack
1	Storage Area	1	Spill Site Area
5	Surface Impoundment/Lagoons		
2	Underground Storage Tanks	2	EOD Areas

CONTAMINANTS OF CONCERN:

Petroleum hydrocarbons, benzene, xylene, toluene, metals

MEDIA OF CONCERN:

Groundwater, Soil

COMPLETED REM/IRA/RA:

IRA	heating fuel tank removal for YPG-45 (FY 89)
IRA	asphalt cap and monitoring for YPG-45 (FY 92)
IRA	SVE ICE at YPG-10 (FY01) ongoing
REM	contaminant source removal for YPG-08 (FY88)
REM	contaminant source removal for YPG-09 (FY90)
REM	contaminated soil removal for YPG-38 (FY94)
REM	contaminated material removed from YPG-31 (FY95)

CURRENT IRP PHASES:

RA at 2 sites LTM at 4 sites

PROJECTED IRP PHASES:

RA at 1 site RA(O) at 1 site
LTM at 5 sites

POSSIBLE FUTURE IRA/RA:

YPG-010, Fuel Bladder Test Site, SVE is ongoing
YPG-045, Ozone Injection

DURATION:

YEAR OF IRP INCEPTION	1993
YEAR OF RA COMPLETION	2006
YEAR OF IRP COMPLETION	2015

Installation Information

SITE DESCRIPTION:

U.S. Army Yuma Proving Ground (YPG) is located in the extreme southwestern portion of the State of Arizona, bordered on the west by the Colorado River. The installation is located in a very remote portion of Yuma County with the nearest major population center, the city of Yuma, approximately 25 miles to the south southwest. The population of the city of Yuma is around 50,000 inhabitants. YPG is one of DOD's largest installations, approximately 69,000 acres in size or roughly 1300 square miles. Comparatively, it is slightly larger than the State of Rhode Island. The predominant land use of adjacent lands is U. S. Department of the Interior restricted use withdrawn lands.

MISSION COMMAND ORGANIZATION:

Major Command: U.S. Army Test and Evaluation Command (ATEC)
Major Subordinate Command: U.S. Army Developmental Test Command (DTC)
Installation: Yuma Proving Ground (YPG) Directorate of Command Technology, Environmental Sciences Division

IRP CHAIN OF COMMAND:

Yuma Proving Ground, Environmental Science Division
Army Environmental Center (AEC)

IRP EXECUTING AGENCIES:

Installation

REGULATORY PARTICIPATION:

Federal: U.S. Environmental Protection Agency (EPA), Region IX
State: Arizona Department of Environmental Quality (ADEQ), Federal Facilities Unit, (formerly known as the Voluntary Cleanup Unit)

REGULATORY STATUS:

Non-National Priority List (NPL), no confirmed or suspected off-site contamination
RCRA Part B Application submitted 2003
Notices of Violation, 2003 from state of Arizona for failure to meet reporting requirements for DRMO.

MAJOR CHANGES TO IAP FROM PREVIOUS YEAR:

A Final RI/FS report was submitted for regulatory review in March 2004. A Draft Final Feasibility Study for YPG-45 was submitted in August 2004. A Decision Document (DD) addressing SVE at YPG-10 is being reviewed for signature. A LUC, monitoring DD for 14 sites, is undergoing Army review. An NFA DD for 2 sites is undergoing review at ADEQ.

DESCRIPTION

A. CURRENT ACTIVITY

Yuma Proving Ground is an active installation that has expanded its mission with the advent of the BRAC process. The ammunition production acceptance mission formerly located at Jefferson Proving Ground was completely relocated to YPG in October 1994. In addition, YPG acquired administrative responsibility for the Cold Regions Test Activity (CRTA) at Ft. Greeley, AK, in October 1994. Yuma Proving Ground is one of twenty-two major test ranges that comprise the DOD Major Range Test Facility Base (MRTFB).

B. HISTORIC ACTIVITY

The Army Ordnance Corps first established it in 1952 as Yuma Test Station for the testing of munitions. In 1961 it was transferred to the U.S. Army Test and Evaluation Command, changed its name to Yuma Proving Ground, expanded its mission for the testing of all types of military materiel and has been in continual operation ever since. The primary focus of the testing is covered by five major commodity areas: (1) Aircraft Armament, (2) Air Delivery, (3) Track and Wheeled Vehicles, (4) Munitions and Weapons, and (5) Environmental Testing. The major tenant activity includes the First Special Warfare Training Group (Airborne) Free Fall School, which relocated in 1995.

C. REGULATORY STATUS

The U.S. Army performed a Preliminary Assessment/Site Inspection of potential areas of environmental concern at Yuma Proving Ground in August 1988 under its environmental response authority under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (USAEHA, August 1988). In November 1988, YPG submitted a Resource Conservation and Recovery Act (RCRA) Part B Permit Application for its Open Burning/Open Detonation Unit to EPA Region 9 and continues to operate under interim status. The State of Arizona has authorization from EPA to implement the RCRA program and most of the requirements of the Hazardous and Solid Waste Amendments (HWSA). In 1996, the Arizona Department of Environmental Quality (ADEQ) and YPG reviewed existing ER,A sites and agreed that YPG could conduct remedial activities following CERCLA. In 1999, ADEQ and YPG agreed to place sites being evaluated under the IRP into four Operable Units, as follows:

Operable Unit 1
YPG - 10 Fuel Bladder Test Site
YPG - 43 Former Fire Training Pit near Laguna Air Field and Bldg. 3021 (Response Complete under the IRP because the site underwent “clean closure” and then became active again. The site is regulated under the Arizona Aquifer Protection Program)
YPG - 45 Building 506 UST Fuel Release

Operable Unit 2
YPG - 01 Old Chemical Laboratory (Building S - 2500)
YPG - 02 Chemical Waste Holding Tank (Building S - 2060)
YPG - 31 West Environmental Test Area
YPG - 32 Former Waste Disposal Area
YPG - 37 77th Explosive Ordnance Demolition Area

Regulatory Status (Con't)

Operable Unit 3
YPG -11 Former Pesticide Mix/Storage Facility at Building T-430
YPG -13b Wash Pad 1 Castle Dome Heliport
YPG -13c Wash Pad 2 (North) Castle Dome Heliport
YPG -13d Waste Basin at Castle Dome Heliport
YPG -23 Washrack/Lagoon (West) at Kofa Building 3490

Operable Unit 4
YPG -03 Septic Tank Leach field near Building 2060
YPG -13a Septic Tank Lagoon Castle Dome Heliport (Response Complete under the IRP because the site is active and is regulated under the state Aquifer Protection Program)
YPG -13e Septic Tank Leachfield (East) at Kofa Building 3490
YPG -13f Septic Tank Leachfield Bldg. 3021 LAAF
YPG -25 Septic Tank Leachfield (North) Castle Dome Heliport
YPG -26 Septic Tank Leachfield (South) Castle Dome Heliport

In 1997, EPA Region 9 performed a Resource Conservation and Recovery Act (RCRA) Facility Assessment of YPG. The 1998 RFA Report identified 51 Solid Waste Management Units (SWMUs) and 6 Areas of Concern (AOC) for potential investigation. Some of the SWMUs identified by EPA are sites already being addressed under the Installation Restoration Program; other sites include mines and mining claims. YPG completed a RCRA Corrective Action Release Assessment of the sites identified by EPA and submitted a document titled: *Release Assessment For Solid Waste Management Units at Yuma Proving Ground, Arizona* (November 2001) to EPA, ADEQ, and DTC in December 2001. In addition to recommending actions for each of the sites, this assessment is being used to determine which sites are eligible for Environmental Restoration, Army (ER,A) funding under the Installation Restoration Program.

As requested by the ADEQ, the SWMUs actively being evaluated as part of the IRP program were placed into four Operable Units. The SWMUs and Operable Units are depicted in Figure 1 and on the YPG Environmental Restoration Data Exchange internet site located at the following Universal Resource Locator (URL) address http://web.ead.anl.gov/ypg . The site is password protected, but is being evaluated by YPG in the hopes that a portion of the internet site can be cleared for public view. Please contact an Argonne representative at email address: martinol@anl.gov in order to obtain a user ID and password. The data exchange Internet site provides information on key topics including: documents; site background; descriptions, photographs and maps of each SWMU; and points of contact.

A background soil sampling plan *Work Plan for Sample Collection and Evaluation to Determine Natural Background Concentrations of Inorganic Constituents in Soils at the Yuma Proving Ground, Arizona* (October 2001) was submitted to ADEQ in October 2001. Samples proposed in the October 2001 work plan were collected and analyzed at the end of 2001. A report on the results of the background soil sampling was provided to ADEQ in March 2002.

Contamination Assessment

A. ASSESSMENT OVERVIEW

A number of regulatory agencies (ADEQ, US EPA Region 9) and US Army agencies (US Army Environmental Hygiene Agency [USAEHA], US Army Toxic And Hazardous Materials Agency [USATHAMA]) have identified potential release sites from past practices at YPG. In 1978, USATHAMA identified 16 potential release sites. In 1988, USAEHA identified 62 potential release sites, referred to in the USAEHA report as Solid Waste Management Units (SWMUs). [USAEHA 1988]. As a result of the USATHAMA and AEHA evaluations, investigation and cleanup of selected SWMUs was conducted. The Installation Restoration Program was established at YPG in 1993.

Yuma Proving Ground has 42 sites listed in the Army Environmental Database-Restoration (AEDB-R). These sites include industrial wastewater surface impoundments, sanitary and construction debris landfills, leach fields, storage areas, fire training sites, and ordnance treatment sites. Of these sites, 35 are Response Complete.

The Center for Health Promotion and Preventive Medicine (CHPPM) conducted relative risk site evaluations at 19 “Not Evaluated” AEDB-R sites in late January 1997. Fifteen sites were scored as low relative risk, three sites were scored as medium relative risk, and one was identified as no further action under the IRP. A number of sites were not sampled because of presumed risks associated with CWA and/or ordnance and explosives.

The primary contaminants of concern at YPG are Petroleum/Oil/Lubricants (POL) and heavy metals. At YPG, the transportation method with greatest potential to cause the conveyance of contaminants off-site is the groundwater resource. Remedial investigations, plans and actions have been initiated for this risk. The sites of environmental concern are the following: YPG-01, 02, 03, 10, 11, 13B, 13C, 13D, 13E, 13F, 23, 25, 26, 31,32, 37 and 45.

On the basis of the Remedial Investigation sampling and analysis results, it was determined that two sites YPG-03 and 13f have no human health-related analytes that are retained. Both are recommended for No Further Action (NFA) on the basis of the combined ecological and human health refinement results. Further evaluation may be warranted for the Fuel Bladder Test Site (YPG-10) on the basis of human health concerns.

In Addition, the Former Pesticide Storage Facility (YPG-11) requires further evaluation on the basis of human health refinement results. Dieldrin is present at elevated levels in three surface soil samples. However, the final decision should consider the nature of the site (e.g. extensive paving) the location of elevated levels (e.g. two elevated levels were beneath the building); and/or the potential for interim remedial action or restricted access.

Finally, eight sites (YPG-11, -13b, -13c, -13d, -23, -13e, -25, and –26 were found to have slightly elevated pesticide (YPG-11) or arsenic concentrations in comparison to site background levels and the human health screening level (between 1.2 to 1.8 times higher). However, it was recommended in the RI Report that these sites be considered in light of the uncertainties inherent in current risk assessment approaches and the frequently higher cleanup levels for arsenic in soil used at other Superfund sites. Use of more realistic exposure frequencies (rather than the default 350 days per year exposure frequency) would likely result in all seven sites not requiring further action. Furthermore, use of a more realistic bio availability (than the 100% bio availability default) would result in seven sites not requiring further action.

Contamination Assessment

At YPG-10 a DD has been submitted for regulatory review. This DD documents a presumptive response strategy for groundwater. The FFS advocates implementing groundwater remediation in a phased approach, with information gained from earlier phases used to refine subsequent investigations, objectives or actions. The strategy outlined for the FBTS begins with an initial source removal phase using soil vapor extraction (SVE) technology. During this initial phase, groundwater monitoring would continue to gather information on contamination trends and natural attenuation parameters. Subsequent phases would be implemented about 4 years after commencement of the SVE stage and after more is learned about the remediation potential of the aquifer at the site. The DD also addresses regular performance monitoring and evaluation throughout the term of any remedy selected and addresses backup or contingency remedies.

Based upon the potential risk to human health, remedial investigation activities were initiated in the fall of 1997 for three sites used for the testing/disposal of chemical warfare agents: YPG-01, Old Chemical Laboratory Building S-2500; YPG-31, West Environmental Test Area, and YPG-32, Former Waste Disposal Area (FWDA). Because of the presumed risk to site workers, no intrusive sampling has occurred or is planned at these sites. Chemical Warfare Agent degradation compounds have been detected at YPG-31 in passive soil gas points in the past. Monitoring wells were installed at two of the sites and were sampled as part of the IRP. A water supply located downgradient of YPG-37 was sampled. CWA degradation compounds were detected in one well from one round of samples at YPG 01, Bldg S-2500, but not in a duplicate sample from the same well. CWA degradation compounds were not detected in any well at YPG-01 in the subsequent two sampling episodes in 2001. CWA degradation compounds have not been detected from groundwater monitoring wells installed at the FWDA YPG-32.

Operable Unit to AEDB-R Conversion

OU 1
YPG-10 Fuel Bladder Test Site
YPG-43 Former Fire Training Pit
YPG-45 Building 506 UST Fuel Release

OU 2
YPG-01 Old Chemical Laboratory (Building S-2500)
YPG-02 Chemical Waste Holding Tank (Building S-2060)
YPG-31 West Environmental Test Area
YPG-32 Former Waste Disposal Area
YPG-37 77th Explosive Ordnance Demolition Area

OU 3
YPG-11 Former Pesticide Mix/Storage Facility Building T-430
YPG-13b Washpad 1 Castle Dome Heliport
YPG-13c Washpad 2 North Castle Dome Heliport
YPG-13d Waste Basin at Castle Dome Heliport
YPG-23 Washrack/Lagoon (west) at Kofa Building 3490

OU 4
YPG-03 Septic Tank Leachfield near Building 2060
YPG-13a Septic Tank Lagoon Castle Dome Heliport
YPG-13e Septic Tank Leachfield (East) Kofa Building 3490
YPG-13f Septic Tank Leachfield Building 3021 LAAF
YPG-25 Septic Tank Leachfield (North) at Castle Dome Heliport
YPG-26 Septic Tank Leachfield (South) at Castle Dome Heliport

PREVIOUS STUDIES

Title	Author	Date
Installation Assessment	USATHAMA	1978
Initial Installation Assessment Update	US Army Environmental Hygiene Agency (USAEHA)	1988-Jul
Interim Final Report Groundwater Contamination Survey No. 38-26-0882-89, Evaluation of Solid Waste Management Units, Yuma Proving Ground	US Army Environmental Hygiene Agency (USAEHA)	1988-Aug
Lead Arsenic Site Closure Report, 192 (DSERTS YPG-38) Mobility Test Area and Laguna Air Field Lagoons, Environmental Baseline Study		1993
POL Investigation Plan	Gutierrez-Palmenberg, Inc (GPI)	1994
DPG Tech Escort Report, On Removal of Liquid Filled Vial from YPG-31		1994-Nov
POL Site QA/QC QMIS Report		1995-Apr
Hazardous and Medical Waste Study No. 37-EF-5481-97 Relative Risk Site Evaluation, Yuma Proving Ground	US Army Center for Health Promotion and Preventive Medicine (CHPPM)	1997-Jan
Site Characterization Report for the POL Bladder Test Spill Site, US Army Yuma Proving Ground	Gutierrez-Palmenberg, Inc (GPI)	1998-Feb
Draft Remedial Investigation Work Plan for Yuma Proving Ground	Argonne National Laboratory	1998-Nov
RCRA Facility Assessment, US Army YPG Final Report	US EPA Region 9	1999-Apr
Draft Final Remdial Investigation Work Plan for Yuma Proving Ground	Argonne National Laboratory	1999-May
Final Building 506 Investigation, Yuma Proving Ground	CDM Federal Services	1999-Jul
Draft Final Remdial Investigation Sampling and Analysis Plan for Selected Sites at Yuma Proving Ground, Volume 1: Field Sampling Plan and Volume: Quality Assurance Project Plan	Argonne National Laboratory	1999-Sep
Draft Community Involvement Plan (internal draft)	Argonne National Laboratory	2000-Feb
Draft Final Community Involvement Pla n (internal draft)	Argonne National Laboratory	2000-Apr
Remedial Investigation Sampling and Analysis Plan for Selected Sites at Yuma Proving Ground, Volume1: Field Sampling Pland and Volume 2: Quality Assurance Project Plan	Argonne National Laboratory	2000-May
Fuel Bladder Test Site Soil Vapor Extraction Work Plan	Argonne National Laboratory	2000-Jul
Draft Preliminary Risk Evaluation for Operable Units 3 and 4, Yuma Proving Ground	Argonne National Laboratory	2000-Aug
Remedial Investigation/Feasibility Study Work Plan for Yuma Proving Ground	Argonne National Laboratory	2000-Dec
Fuel Bladder Test Site Soil Vapor Extraction Report	Argonne National Laboratory	2000-Dec
Draft Remedial Investigation Report for selected sites at Yuma Proving Ground	Argonne National Laboratory	2001-June
Action Memorandum Interim Remedial Action at the Fuel Bladder Test Site (YPG-10) at Yuma Proving Ground and LaPaz Counties; App'v by ADEQ	Argonne National Laboratory	Submitted 2001-Mar; Approved 2001-Jul

PREVIOUS STUDIES

Title	Author	Date
Work Plan for Sample Collection and Evaluation to Determine Natural Backgound Concentrations of Inorganic Constituents in Soils at Yuma Proving Ground	Argonne National Laboratory	2001-Oct
Soil Vapor Extraction Pilot Test Building 506 Underground Storage Tank Site	Argonne National Laboratory	2001-Oct
Release Assessment for Solid Waste Management Units at Yuma Proving Ground	Argonne National Laboratory	2001-Nov
Draft Final Preminimary Environmental Investigation for the Chemical Toxic Laboratory, Western Environmental Test Area, and Chemical Toxic Waste Disposal Area, Yuma Proving Ground	Argonne National Laboratory	2002-Mar
Background Concentrations of Inorganic Constituents in Soils at Yuma Proving Ground	Argonne National Laboratory	2002-Mar
Background Concentrations of Inorganic Constituents in Soils at Yuma Proving Ground	Argonne National Laboratory	2002-Mar
Remedial Investigation Report for Selected Sites at Yuma Proving Ground	Argonne National Laboratory	2002-Jul
Focused Feasibility Study for Subsurface Soil and Groundwater at the Fuel Bladder Test Site, Yuma Proving Ground	Argonne National Laboratory	2003-Jan
Draft (December 2002) and Final Work Plan for Laboratory and Field Feasibility Testing, In-Situ Ozone Treatment of Petroleum Hydrocarbons at Building 506 Underground Storage Tank Site	Argonne National Laboratory	2003-Feb
Refinement of the Screening Risk Assessment for Selected Sites at Yuma Proving Ground	Argonne National Laboratory	2003-Feb
Final Remedial Investigation Report for selected sites at Yuma Proving Ground	Argonne National Laboratory	2004-Apr

FY 2005

Yuma Proving Ground

Arizona

ER,A Active AEDB-R Sites

YPG-01
OLD CHEMICAL LABORATORY (BLDG S-2500)

SITE DESCRIPTION

STATUS

RRSE RATING: Low Risk

CONTAMINANTS OF CONCERN:
Chemical Agent Breakdown Products & Solvents

MEDIA OF CONCERN:
Groundwater, Soil

COMPLETED IRP PHASE:
PA/SI, RI/FS

CURRENT IRP PHASE: LTM

FUTURE IRP PHASE:
LTM

Building S-2500, located at the YPG Materiel Test Area, is a laboratory that is currently being used as a soil processing laboratory. The building was likely constructed sometime after April 1954, based on a review of aerial photographs and installation blueprints. A blueprint titled "Basic Information Maps, General Storm Drainage, Office of the Post Engineer, Yuma Test Station, 1958," depicts Building S-2500 labelled as "Chem. Corps. Desert Test Lab." within an area approximately 1500' by 400' designated as "Chemical Test Team Area". Chemical agent detection kit challenge tests and agent purity analyses were conducted from the mid-1950s until 1969 within glove boxes and/or fume hoods within the laboratory. Some wastes were disposed into what is referred to as a "leaching well for acid waste" in YPG Drawing No. 71-07-12 (revised 1 Feb. 65). Solid materials were reportedly transported to the Former Waste Disposal Area (YPG 032) [USAEHA August 1988]. No spills were reported in the archival documents reviewed. A "leaching well" identified in archival blueprints could not be located with geophysical investigation techniques. Chemical warfare agent (CWA) degradation compounds were detected in passive soil gas monitors (Argonne National Laboratory 1998). Additional passive soil gas monitors were deployed in January 2000 as part of the FSP and CWA degradation compounds were detected at two of 26 locations. Four monitoring wells have been installed as part of the Remedial Investigation (RI) activities. Benzene and toluene were detected in the sample collected from MW1A at concentrations of 0.6 ug/l and 0.9 ug/l respectively. Bromoform, methyl phosphonic acid, a CWA-degradation compound, were also detected in MW 2 but not in a duplicate sample collected from the same well. However, no CWA-degradation compounds were detected in any of the 4 monitoring wells in nine subsequent sampling episodes through 2003 (Argonne March 2004). Land Use Controls were completed and included signage around the building.

PROPOSED PLAN

Complete Decision Document and implement Land Use Control.

Existing wells will continue to be sampled for the presence/absence of CWA degradation and volatile organic compounds (VOC), in accordance with, the decision document. Should a sample show CWA-degredation compounds, the the monitoring plan may change.

Continue to use the site as a soil sample preparation laboratory. Continue to control access to Building S-2500.

Reporting to include semi-annual letter report of analytical results, followed by annual detailed report of on-site activities.

YPG-02
CHEMICAL WASTE HOLDING TANK (BLDG S-2060)

SITE DESCRIPTION

STATUS

RRSE RATING: Low Risk

CONTAMINANTS OF CONCERN:
Solvents, Heavy Metals, Explosive-Related Compounds and Petroleum

MEDIA OF CONCERN:
Soil

COMPLETED IRP PHASE:
PA/SI, RI/FS

CURRENT IRP PHASE:
RC

FUTURE IRP PHASE:
RC

Bldg. 2060 is located at the Mobility Test Area (MTA) complex. Building 2060 housed both a chemical laboratory and a petroleum laboratory (USATHAMA 1978). Propellants, explosives and gun tube deposits were analyzed. Residual material was containerized and given to YPG EOD personnel for disposal on the range by open burning. Reportedly, chemicals were neutralized or diluted and poured into the lab's holding tank. The holding tank was periodically pumped out and the sludge was taken to a landfill for disposal. The petroleum laboratory was used to perform physical and chemical tests on fuels and lubricants to determine conformance to specifications, lubricant capabilities, octane rating, vapor lock potential, and performance in test engines. Residual petroleum products from tests were collected for reuse. General laboratory chemicals were dumped into a waste holding tank after neutralization and/or dilution. The residues were later collected for disposal. (USATHAMA 1978). The holding tank located on the northwest side of Bldg. S-2060 could have received residuals from either the Petroleum Laboratory, or the chemical Laboratory. The tank was first used in 1954. It is unknown when the tank ceased being used for storing laboratory residuals. However, the tank contents were examined during the RI and the tank appeared to contain heating fuel. As part of the RI, samples were collected from the tank and from soil surrounding the tank. No volatile organic compounds (VOCs), semi – volatile organic compounds (SVOCs) or total petroleum hydrocarbons (TPHs) were detected in subsurface soils (Argonne July 2002).

The tank was excavated and removed in FY02. Soil samples collected beneath the tank after removal contained TPHs and benzo(a) pyrene, above the residential SRL, with maximum concentrations at approximately 50% of the industrial SRL. The Remedial Investigation Report determined that YPG-02 did not represent a risk to human health or the environment. (Argonne Feb 2003).

PROPOSED PLAN

Prepare a Decision Document to describe Land Use Control for the subject site. (funded FY04)

YPG-03
SEPTIC TANK LEACHFIELD NEAR BLDG 2060

SITE DESCRIPTION

Prior to the advent of the base-wide sanitary wastewater collection/ treatment system, wastewater from Bldg. S-2060 was discharged to a septic tank leach field (see description of Bldg. S-2060 on page 20). The capacity of the septic tank is unknown. The distribution line extends approximately 400 feet northwest of the tank to a leach field located beyond a road used as a vehicle obstacle course.

The septic tank was removed (April 2002). Based upon the RI results (Argonne July 2002) and the risk refinement step (Argonne February 2003), YPG-03 does not present a risk to human health or the environment.

STATUS

RRSE RATING: Low Risk

CONTAMINANTS OF CONCERN:
Solvents, Heavy Metals, Explosive Related Compounds and Petroleum Hydrocarbons

MEDIA OF CONCERN:
Superficial Soil and Subsurface Soil

COMPLETED IRP PHASE:
PA/SI, RI/FS

CURRENT IRP PHASE:
RC

FUTURE IRP PHASE:
RC

PROPOSED PLAN

Propose no further action pending decision document.

YPG-10
FUEL BLADDER TEST SITE

SITE DESCRIPTION

STATUS

RRSE RATING: Low Risk

CONTAMINANTS OF CONCERN:
Lead, BTEX

MEDIA OF CONCERN:
Groundwater, soil

COMPLETED IRP PHASE:
PA/SI, RI/FS

CURRENT IRP PHASE:
RA, RA(O)

FUTURE IRP PHASE:
RA(O), LTM

Portable fuel bladders were tested at a site 1/2 mile east of the YPG Materiel Test Area during the mid-1960s until about 1972. The site contains twelve pits. From historical records, seven were bermed test pits, four were used as borrow areas during construction and one additional pit (Pit 12) had no information regarding its use. In addition to the pits, there are two depressions (termed the North and South Depression(s)) where above ground steel fuel tanks were used to supply the fuel used for bladder testing. Large fuel bladders designed for field deployment were challenge tested within the bermed areas. The berms and above ground tanks (AGTs), which are no longer present at the site, were positioned within a fenced area that is approximately 30 acres in extent. Spillage of greater than 250,000 gallons of leaded gasoline was documented during the period of test activity. FSP-associated investigation activities and past investigators have confirmed the presence of benzene/xylene/toluene-related compounds in the vadose zone and in groundwater (Argonne 2004). Consistent with the technical approach in the ADEQ-approved RI WP and SAP, a presumptive remedy of SVE was proposed to ADEQ in October 2001.

An IRA that included operation of a dual engine soil vapor extraction unit has been performed to determine design parameters for a full scale ICE SVE system for YPG-10.

Risk refinement steps have identified a potential unacceptable risk to human health and ecological resources (Argonne 2004).

A FFS was completed and submitted to ADEQ in 2003. An RI report was completed in March 2004. Obtained an agreement from ADEQ to prepare final DD that integrated the SVE system into a Final DD.

PROPOSED PLAN

Continue groundwater monitoring at existing monitoring wells.A BRA is currently funded in FY04.

Continue to operate expanded SVE systems in accordance with DD. This remedy initiated as IRA, to be expanded as the final remedy for deep soil as agreed to by ADEQ and YPG.

YPG-11
FORMER PESTICIDE MIX/STORAGE FACILITY (BLDG T-430)

SITE DESCRIPTION

RRSE RATING: Medium Risk
CONTAMINANTS OF CONCERN:
Pesticides, Herbicides, Insecticides, Heavy Metals and Hydrocarbons.
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI/FS
CURRENT IRP PHASE:
RA
FUTURE IRP PHASE:
RC

The Bldg. 430 is functioning as a storage building and is located within the YPG Public Works compound. Prior to 1980, the building was used for the storage of a variety of bulk insecticides, herbicides, and associated chemical application equipment. As part of the FSP-related investigation activities samples were collected on the edge of the building foundation and through the existing concrete floor. Eight pesticide compounds were detected in one or more soil samples collected at the site. Inorganics were detected at concentrations in excess of the Arizona SRL of 10 mg/kg, but less than the Groundwater Protection Limits. Pesticide detects are limited to samples collected from the east and south of Bldg 430. No complete exposure route exists between contaminated areas of the site and site workers, the only receptors that have access to the site. Dieldrin is elevated in soil beneath the building, thus limiting exposure to human or ecological receptors.

Based upon the RI results (Argonne July 2002) and the risk refinement step (Argonne February 2003) YPG-11 does not represent a risk to ecological resouces. YPG-11 may require further evaluation on the basis of human health refinement results.

PROPOSED PLAN

Include building in site-wide LUC Decision Document.

YPG-13B
WASHPAD 1 CASTLE DOME HELIPORT

SITE DESCRIPTION

The site consists of what appears to be a helicopter tie down pad located on the south side of Bldg. 6071 in the Castle Dome Heliport Area. The pad measures approximately 25 feet by 25 feet and was used during the 1970s and 80s. Fuel/oil products potentially contaminated the soil immediately adjacent to the pad as the wash/rinse water drained off into the surrounding soil. (CHPPM 1997), FSP-related sample activities included the collection of soil samples adjacent to the pad (Argonne July 2002). Arsenic, chromium, lead, iron, thallium, vanadium and zinc are determined to be present above background concentrations and have been evaluated in the risk refinement step (Argonne Feb 2003).

YPG-13B does not present a risk to ecological resources. The occupational use scenario to exposure has been completed.

The refinement step for exposure scenarios has been re-analyzed.

STATUS

RRSE RATING: Medium Risk

CONTAMINANTS OF CONCERN:
Metals, Volatile Organics, & Petroleum Hydrocarbons

MEDIA OF CONCERN:
Soil

COMPLETED IRP PHASE:
PA/SI, RI/FS, RA

CURRENT IRP PHASE:
RC

FUTURE IRP PHASE:
RC

PROPOSED PLAN

Prepare a Decision Document to describe Land Use Control for the subject site. (funded FY04)

YPG-13C
WASHPAD 2 NORTH CASTLE DOME HELIPORT

SITE DESCRIPTION

The site consists of what appears to be a helicopter tie down pad located on the north side of Bldg. 6071 in the Castle Dome Heliport Area. The pad measures approximately 25 feet by 25 feet and was used during the 1970s and 80s. Fuel/oil products potentially contaminated the soil immediately adjacent to the pad as the wash/rinse water drained off into the surrounding soil. (CHPPM 1997). RI-related sample activities included the collection of soil samples adjacent to the pad, (Argonne July 2002). Arsenic, chromium, lead, iron, thallium, vanadium and zinc determined to be present above background concentrations and have been evaluated in the risk refinement step (Argonne Feb 2003).

YPG-13C does not present a risk to ecological resources. The occupational use scenario to exposure has been completed.

The refinement step for exposure scenarios has been re-analyzed.

STATUS

RRSE RATING: Medium Risk

CONTAMINANTS OF CONCERN:
Metals

MEDIA OF CONCERN:
Soil

COMPLETED IRP PHASE:
PA/SI, RI/FS, RA

CURRENT IRP PHASE:
RC

FUTURE IRP PHASE:
RC

PROPOSED PLAN

Prepare a Decision Document to describe Land Use Control for the subject site. (funded FY04)

YPG-13D
WASTE BASIN AT CASTLE DOME HELIPORT

SITE DESCRIPTION

This site consists of a waste basin located on the east side of Bldg 6071 in the Castle Dome Heliport Area. The basin measured approximately 5 feet by 25 feet and was 3 feet deep. Wastes associated with Castle Dome activities were reportedly dumped into the basin and allowed to dry and percolate into the soil. The site was used in the 70s and 80s (CHPPM 1997). Geophysics has been conducted in an attempt to locate the basin. In addition, aerial photographs have been reviewed to identify the location of the basin. RI-related soil samples have been collected in the inferred location of the waste basin (Argonne July 2002). Arsenic, chromium, antimony, thallium, vanadium were evaluated in the risk refinement step (Argonne Feb 2003).

YPG-13D does not present a risk to ecological resources. The occupational use scenario to exposure has been completed.

The refinement step for exposure scenarios has been re-analyzed.

STATUS

RRSE RATING: Low Risk

CONTAMINANTS OF CONCERN:
Volatile Organics, Metals, Petroleum Hydrocarbons

MEDIA OF CONCERN:
Soil

COMPLETED IRP PHASE:
PA/SI, RI/FS, RA

CURRENT IRP PHASE:
RC

FUTURE IRP PHASE:
RC

PROPOSED PLAN

Prepare a Decision Document to describe Land Use Control for the subject site. (funded FY04)

YPG-13E
SEPTIC TANK LEACHFIELD (E) KOFA BLDG 3490

SITE DESCRIPTION

This site is located in the Kofa Range Area and consists of a leach field located south of Bldg 3490 and east of the former lagoon site (YPG 23). The leach field received wastes from Bldg 3490 that is known as the Vehicle Maintenance Facility. The operating dates of the septic tank leach field are unknown except that it was abandoned sometime in the 1980s. Sewage and light industrial wastes were probably discharged into the system (USAEHA 1988). The area in proximity to the leach field for YPG-13E is used as a staging area for military vehicles at the VMF. As part of the SAP, soil samples were collected from 10 locations (Argonne July 2002) The septic tank was removed in April 2002.

STATUS

RRSE RATING: Low Risk

CONTAMINANTS OF CONCERN:
Metals and Volitile Organics

MEDIA OF CONCERN:
Soil

COMPLETED IRP PHASE:
PA/SI, RI/FS, RA

CURRENT IRP PHASE:
RC

FUTURE IRP PHASE:
RC

Diesel range organics were found in one sample. Gasoline range organics were detected in all but one sample with concentrations estimated between 110 and 220 mg/kg. Arsenic,chromium, lead, thallium, and vanadium were evaluated in the risk refinement (Argonne February 2003).

YPG-13E does not represent a risk to ecological resouces. The occupational use scenario to exposure has been completed.

The refinement step for exposure scenarios has been re-analyzed.

PROPOSED PLAN

Prepare a Decision Document to describe Land Use Control for the subject site. (funded FY04)

YPG-13F
SEPTIC TANK LEACHFIELD BLDG 3021 LAAF

SITE DESCRIPTION

The site is a leach field located west of Bldg 3021 in the Laguna Army Airfield Area and covers an area about 60 feet by 90 feet. The leach field received wastes from Bldg 3021. The operation dates are unknown, except that it was abandoned in 1995 and covered over. Sewage and light industrial wastes were probably discharged into this system. Samples were collected from adjacent to the septic tank and from within the leach field (Argonne July 2002). Arsenic, iron, barium, thallium and vanadium were evaluated in the risk refinement (Argonne February 2003).

YPG-13F does not present risks to either human health or the environment.

STATUS

RRSE RATING: Low Risk

CONTAMINANTS OF CONCERN:

Metals, Volatile Organics, PAHs

MEDIA OF CONCERN:

Soil

COMPLETED IRP PHASE:

PA/SI, RI/FS, RA

CURRENT IRP PHASE:

RC

FUTURE IRP PHASE:

RC

PROPOSED PLAN

No Further Action after Decision Document.

YPG-23
WASHRACK/LAGOON (WEST) AT KOFA BLDG 3490

SITE DESCRIPTION

Wastewater from a vehicle wash rack was discharged to a lagoon for disposal. The lagoon was formerly located south and west of Bldg 3490 and is thus west of YPG 13E, the other SWMU located in proximity to Bldg 3490. The dates of operations for the washrack lagoon system are unknown, but the lagoon system was abandoned in 1976 and wastewater flow was rerouted to the present Kofa area sanitary wastewater treatment system at that time. The lagoon is currently covered over with fill and is used as a staging and parking area for equipment. The waste stream included solvents, POL, soaps, and domestic wastes.The SI recommended follow-up investigation for contaminants.

STATUS

RRSE RATING: Low Risk
CONTAMINANTS OF CONCERN:
Solvent, Heavy Metals, TPH
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI/FS, RA
CURRENT IRP PHASE:
RC
FUTURE IRP PHASE:
RC

Soil samples were collected from the inferred location of the surface impoundment (Argonne July 2002). Arsenic, thallium, berylium, chromium, lead, antimony, TPHs, TCE, methyl chloride, and vanadium were evaluated in the refinement step (Argonne February 2003).

YPG-23 does not represent a risk to ecological resources. The occupational use scenario to exposure has been completed.

The refinement step for exposure scenarios has been re-analyzed.

PROPOSED PLAN

Prepare a Decision Document to describe Land Use Control for the subject site. (funded FY04)

YPG-25

SEPTIC TANK LEACHFIELD (NORTH) AT CASTLE DOME HELIPORT

SITE DESCRIPTION

This site is located on the north end of the Castle Dome Heliport Complex. The tank/leach lines have not been active since approximately 1960 when the Castle Dome Heliport (CDH) septic tank sewage lagoon was constructed. The YPG DPW constructed an asphalt service road over the tank area, and now only a capped service pipe protrudes from the ground. Samples were collected as per the FSP (Argonne July 2002). Aluminum, arsenic, chromium, manganese, and lead were evaluated in the refinement step (Argonne Februry 2003). YPG-25 represents no risk to ecological resources. The occupational use scenario to exposure has been completed.
The refinement step for exposure scenarios has been re-analyzed.

STATUS

RRSE RATING: Low Risk
CONTAMINANTS OF CONCERN:
Inorganics, Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI/fS, RA
CURRENT IRP PHASE:
RC
FUTURE IRP PHASE:
RC

PROPOSED PLAN

Prepare a Decision Document to describe Land Use Control for the subject site. (funded FY04)

YPG-26

SEPTIC TANK LEACHFIELD (SOUTH) AT CASTLE DOME HELIPORT

SITE DESCRIPTION

Site is located on the south end of the Castle Dome Heliport Complex. The tank/leach lines have probably not been active since the Castle Dome Heliport (CDH) septic tank sewage lagoon was constructed in approximately 1960. All sewage waste now flows to the CDH Sewage Treatment Lagoon to the west. The tank is reported to be of stainless steel construction. Samples were collected from in proximity to the septic tank and from the leach field. After comparison to background study results, arsenic, berylium, chromium, cobalt, lead, methylene chloride, thallium and vanadium were evaluated in the refinement step (Argonne February 2003). The spetic tank was removed in April 2002.

YPG-26 represents no risk to ecological resources. The occupational use scenario to exposure has been completed.

The refinement step for exposure scenarios has been re-analyzed.

STATUS

RRSE RATING: Low Risk

CONTAMINANTS OF CONCERN:
Metals, VOCs

MEDIA OF CONCERN: Soil

COMPLETED IRP PHASE:
PA/SI, RI/FS, RA

CURRENT IRP PHASE:
RC

FUTURE IRP PHASE:
RC

PROPOSED PLAN

Prepare a Decision Document to describe Land Use Control for the subject site. (funded FY04)

YPG-31
WEST ENVIRONMENTAL TEST AREA

SITE DESCRIPTION

This site is located 2.3 miles north of Phillips Drop Zone. It is enclosed by an 8-ft-tall chain-link fence and covers an area of 3,000 feet by 2,100 feet. At this location, environmental testing of CWA and munitions and assorted military material was conducted from the 1950s until 1969. In addition, a single disposal operation occurred at the termination of CWA testing.

A historical record search, aerial photographic review, and an investigation using geophysics and soil gas sampling techniques were conducted in two areas where CWA-testing and the disposal operation occurred in the past. CWA-degradation compounds were detected in soil gas samples collected from what is inferred to be (based upon geophysics and aerial photographic interpretation) areas used for the one time disposal of equipment used for CWA-related tests. (Argonne March 2004). VOCs were also detected in soil gas samples collected from the northern section of the site.
Land Use Controls were completed, and included signage around the building and the existing engineering controls (fence) will continue to be maintained.

STATUS

RRSE RATING: NE

CONTAMINANTS OF CONCERN:
Chemical Warfare Agent, CWA Break-down Products, Volatile Organics, Metals, Explosive Related Compounds

MEDIA OF CONCERN:
Soil

COMPLETED IRP PHASE:
PA/SI, RI, RA

CURRENT IRP PHASE:
LTM

FUTURE IRP PHASE:
LTM

PROPOSED PLAN

Complete Decision Document and implement Land Use Control.
Existing well (closest production well) will continue to be sampled for the presence/absence of CWA degradation and volatile organic compounds (VOC) and perchlorate, in accordance with the Decision Document. Should a sample show CWA-degredation compounds, VOCs, and/or perchlorate, the monitoring plan may change.

Reporting to include semi-annual letter report of analytical results, followed by annual detailed report of on-site activities.

YPG-32
FORMER WASTE DISPOSAL AREA

SITE DESCRIPTION

The Chemical Agent Disposal Area site is located 1/2 mile north of the West Environmental Test/Storage Area site. The site occupies about 4.7 acres and is surrounded by barbed-wire fence. It consists of a number of, now buried disposal pits used for material disposal. The site was used from the early 1950's until late 1969 for disposal of decontaminated chemical agent wastes from environmental and purity analysis testing at the Old Chemical Laboratory (Building S-2500, YPG-01) and rocket-firing tubes used for chemical ammunition. The area and disposal pits, though "cleared" by previous investigations, required re-evaluation. The soil of one pit has discolored soil on the surface that could be associated with CWA decontamination activities. Monitoring wells have been installed. No CWA-degradation compounds have been detected in the wells for all sampling episodes in 2001 through 2003. Land Use Controls were completed, including signage, and engineering controls (fence) were upgraded.

STATUS

RRSE RATING: Medium Risk

CONTAMINANTS OF CONCERN:
Chemical Warfare Agent, CWA Breakdown Products, Volatile Organics, Perchlorate

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE: PA/SI, RI/FS, IRA, RA

CURRENT IRP PHASE: RA

FUTURE IRP PHASE:
LTM

PROPOSED PLAN

Complete Decision Document and implement Land Use Control.
Existing wells will continue to be sampled for the presence/absence of CWA degradation and volatile organic compounds (VOC) and perchlorate, in accordance with the Decision Document. Should a sample show CWA-degredation compounds, VOCs, and/or perchlorate, the monitoring plan may change.

Reporting to include semi-annual letter report of analytical results, followed by annual detailed report of on-site activities.

YPG-37
77TH EOD AREA

SITE DESCRIPTION

The 77th EOD activity operated from 1973 to 1979 at this location approximately 4 miles north of Phillips Drop Zone in the Cibola Range area. An open pit or a number of open pits were used for the detonation of munitions and ordnance from on and off the installation. The site is about 7 acres. Representatives of the YPG ammunition recovery unit assisted in the execution of the YPG IRP field-sampling program. The inferred location(s) of the pits were sampled in February 2000 (Argonne 2004). After comparison to background study results, arsenic, chromium, thallium and vanadium were evaluated further in the RI Report (Argonne 2004).

Arsenic, thallium, and vanadium may represent a potential risk to ecological resource. There does not appear to be a risk to human health.

STATUS

RRSE RATING: Low Risk

CONTAMINANTS OF CONCERN:
Heavy Metals

MEDIA OF CONCERN:
Soil

COMPLETED IRP PHASE:
PA/SI, RI/FS

CURRENT IRP PHASE:
RC

FUTURE IRP PHASE:
RC

PROPOSED PLAN

Waiting for input from ADEQ. Site may be addressed by LUC Decision Document.

YPG-45
BLDG 506 UST FUEL RELEASE

SITE DESCRIPTION

The Bldg 506 site is located at the Main Administrative Area. Leaking heating fuel underground storage tanks were replaced in 1989. Remedial investigation by drilling and soil analyses was completed in 1991. Interim remedial action, asphalt capping and monitoring instrumentation, was conducted in 1992.
In 1995 the YPG DPW removed the capping for the purpose of building & grounds beautification. Groundwater is approximately 50 feet below ground surface. Lysimeters installed during 1992 were sampled in December of 1998 and revealed volatile organics and petroleum hydrocarbons just slightly above background concentrations. Monitoring wells, soil vapor wells have been installed and sampled. Soil samples have also been collected from the former location of the leaking UST (Argonne 2004). Numerous polynuclear aromatic hydrocarbons, and petroleum hydrocarbons have been identified as COPC.
Groundwater is not contaminated at the site. There are no exposure routes to human or ecological receptors. Despite the absence of risk ADEQ requested the full evaluation of remedial alternatives for the site. Over excavation for the purpose of removal of the contaminated soil is not an option because the action would grossly impair the structural integrity of Bldg 506. Bioventing and/or SVE was also proposed.
Electrochemical remediation technology feasibility was assessed. An ozone injection work plan was submitted for ADEQ approval in March 2003. A pilot study for ozone treatment was performed in FY04.
A Draft Final FFS was submitted to ADEQ in August 2004.

STATUS

RRSE RATING: Medium Risk
CONTAMINANTS OF CONCERN:
VOCs, Petroleum Hydrocarbons
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, IRA, RI/FS
CURRENT IRP PHASE:
LTM
FUTURE IRP PHASE:
LTM

PROPOSED PLAN

Complete FS in FY04. Land use controls will be implemented and Long Term Monitoring will continue

FY 2005

Yuma Proving Ground

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Response Complete Sites

YPG-04
PETROLEUM LABORATORY (BLDG. S-2060)

SITE DESCRIPTION

Building 2060 is located at the Mobility Test Area (MTA) complex. Building 2060 housed both a chemical laboratory and a petroleum laboratory (USATHMA 1978). Propellants, explosives, and gun tube deposits were analyzed. Residual material was containerized and given to YPG EOD personnel for disposal on the range by open burning. Reportedly, chemicals were neutralized or diluted and poured into the lab's holding tank. The holding tank was periodically pumped out and the sludge was taken to a landfill for disposal. The tank was first used in 1954. It is unknown when the tank ceased being used for storing laboratory residuals. However, the tank contents were examined during the SIand the tank appears to contain heating fuel at this time. The petroleum laboratory was used to perform physical and chemical tests on fuels and lubricants to determine conformance to specifications, lubricant capabilities, octane rating, vapor lock potential, and performance in test engines.

STATUS

RRSE RATING: NE

CONTAMINANTS:
VOCs, SVOCs, Metals, PCBs

MEDIA OF CONCERN:
Soil

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC

This site is active and not eligible for IRP funding and is, therefore, response complete under the IRP. 198808

YPG-05
55 GAL. POL STORAGE AT PRETROLEUM LAB

SITE DESCRIPTION

This is an active satellite accumulation point within YPG-04 (see description of YPG-04)

This site is active and not eligible for IRP funding and is, therefore, response complete under the IRP. 198808

STATUS

RRSE RATING: NE

CONTAMINANTS:
None

MEDIA OF CONCERN:
None

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC

YPG-06
OB/OD NEW DEMO AREA-KOFA EAST

SITE DESCRIPTION

This site is used for disposal of ordnance and explosives. It is active and is addressed in the February 2003 RCRA Permit Application.

This site is active, is regulated under a RCRA permit application and is not eligible for IRP funding and is, therefore, response complete under the IRP. RC in AEDB-R 199703

STATUS

RRSE RATING: LOW

CONTAMINANTS:
None

MEDIA OF CONCERN:
None

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC

YPG-07
MOBILITY RANGE (GENERAL)

SITE DESCRIPTION

This site is an active military testing and training range.

This site is active and not eligible for IRP funding and is, therefore, response complete under the IRP. 199703

STATUS

RRSE RATING: NE

CONTAMINANTS:
None

MEDIA OF CONCERN:
None

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC

YPG-09
RAD STORAGE SITE (BLDG. 3557)

SITE DESCRIPTION

This site is active.

This site is active and not eligible for IRP funding and is, therefore, response complete under the IRP. 199006

STATUS

RRSE RATING: NE

CONTAMINANTS:
None

MEDIA OF CONCERN:
None

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC

YPG-12
PESTICIDE MIX/STORAGE FACILITY (BLDG. 416)

SITE DESCRIPTION

This site was a satellite accumulation point that no longer exists.

This site no longer exist and, therefore, is not eligible for IRP funding.

STATUS

RRSE RATING: Medium Risk

CONTAMINANTS:
None

MEDIA OF CONCERN:
Soil

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC

YPG-13A
SEPTIC TANK LAGOON CASTLE DOME HELIPORT

SITE DESCRIPTION

This site is active.

This site is active and not eligible for IRP funding and is, therefore, response complete under the IRP. 200101

STATUS

RRSE RATING: Medium Risk

CONTAMINANTS:
None

MEDIA OF CONCERN:
None

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC

YPG-15
RAW SEWAGE LAGOON SYSTEM - MAIN POST

SITE DESCRIPTION

This site is active. It recieves wastewater from buildings on the main post. The site is regulated under the Arizona Aquifer Protection Program.

This site is active and not eligible for IRP funding and is, therefore, response complete under the IRP. 199703

STATUS

RRSE RATING: NE

CONTAMINANTS:
None

MEDIA OF CONCERN:
None

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC

YPG-20
LAGOON AT MOBILITY TEST AREA

SITE DESCRIPTION

This site is active. It recieves wastewater from buildings in the Mobility Test Area. This site is regulated under the Arizona Aquifer Protection Program.

This site is active and not eligible for IRP funding and is, therefore, response complete under the IRP. 199703

STATUS

RRSE RATING: Low Risk

CONTAMINANTS:

None

MEDIA OF CONCERN:

None

COMPLETED IRP PHASE:

PA/SI

CURRENT IRP PHASE:

RC

YPG-21
IMHOFF TANK AT MOBILITY TEST AREA LAGOON

SITE DESCRIPTION

This site is active and used to treat wastewater in the Mobility Test Area. Sludge from the MTA is settled in the Imhoff Tank and it is regulated under an Arizona Aquifer Protection Permit.

This site is active and not eligible for IRP funding and is, therefore, response complete under the IRP. 199703

STATUS

RRSE RATING: NE

CONTAMINANTS:

None

MEDIA OF CONCERN:

None

COMPLETED IRP PHASE:

PA/SI

CURRENT IRP PHASE:

RC

YPG-24
RAW SEWAGE LAGOONS AT KOFA RANGE

SITE DESCRIPTION

This is an active site used to treat wastewater orginating on the Kofa Range. The site is regulated under an Arizona Aquifer Protection Permit.

This site is active and not eligible for IRP funding and is, therefore, response complete under the IRP. 199703

STATUS

RRSE RATING: Low Risk

CONTAMINANTS:
None

MEDIA OF CONCERN:
None

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC

YPG-27
LANDFILL 5 KM S-SE OF MAIN POST

SITE DESCRIPTION

ERA Eligibility: This site may be eligible for IRP funding.

This site may be eligible for IRP funding.

STATUS

RRSE RATING: NE

CONTAMINANTS:
None

MEDIA OF CONCERN:
None

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC

YPG-30
LANDFILL 4 KM NW OF KOFA RANGE

SITE DESCRIPTION

This is an active sanitary landfill located 4 kilometers northwest of the Kofa Range. This site is regulated by ADEQ.

This site is active and not eligible for IRP funding and is, therefore, response complete under the IRP. 199703

STATUS

RRSE RATING: NE

CONTAMINANTS:
None

MEDIA OF CONCERN:
None

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC

YPG-33
TEST SITE 8 KM W RT95, 4.4 KM SW CIBOLA ROAD

SITE DESCRIPTION

This is an active site.

This site is active and not eligible for IRP funding and is, therefore, response complete under the IRP. 199703

STATUS

RRSE RATING: NE

CONTAMINANTS:
None

MEDIA OF CONCERN:
None

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC

YPG-34
TEST SITE NE OF CHEMICAL AGENT DISPOSAL AREA

SITE DESCRIPTION

This site is located on an active range.

This site is on an active range and is not eligible for IRP funding and is, therefore, response complete under the IRP. 199703

STATUS

RRSE RATING: NE

CONTAMINANTS:
None

MEDIA OF CONCERN:
None

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC

YPG-35
OLD DEMO AREA (N BASE OF MUGGINS MOUNTAINS)

SITE DESCRIPTION

The Muggins Mountain Site is a combination of units defined as Solid Waste Management Units (SWMU) in the southern Kofa region of YPG. The site is approximately 600 acres in size overall, with 2 parcels currently identified. The two parcels are the Trench Area and the Demolition Range. Items treated and disposed in both areas include (not limited to) the following types of Ordnance Explosives (OE): 75mm, 105mm, 155mm, 8-inch and 12-inch projectiles, bombs up to 1000 pounds, and ammunition boxes (with an accelerant). Types of munitions fills treated include: High Explosives, White Phosphorous, Thermite, other incendiary devices, flares and other signaling devices, and solid or loose propellants. A historical records search recently completed indicates that, in addition to portions of the site being closed pursuant to a RCRA closure plan, there are portions of the site that are subject to RCRA Corrective Action and thus are probably ER,A eligible.

STATUS

RRSE RATING: Low Risk

CONTAMINANTS:
VOCs, SVOCs, Metals, PCBs

MEDIA OF CONCERN:
Soil

COMPLETED IRP PHASE:
PA/SI, RI

CURRENT IRP PHASE:
RC

T**he only areas operated post 1980 are:**

- The large open trench and some surrounding operations for munitions cutting and storage. A total of ~ 7 acres land mass.
- One series of OD pits covering approximately 5 acres

Portions of the site potentially eligible for ER,A funding include:

- A minimum of 15 munitions related items disposal pits (sites mostly undefined, all but 1 pre-1980) in the trench area,
- Approximately 50 open detonation pits (in about 200 acres of land, all but 1 area of 5 acres pre-1974) in the open detonation area,
- 1 burn on ground area (approximately 5-7 acres, pre-1974),
- A minimum of 2 open burning trenches for ammunition boxes (with known OE and a great amount of OE scrap, suggesting other operations) included inside the open detonation area,
- OE and/ or OE scrap is spread around the mountain side covering another approximately 200 acres surrounding the open detonation area

This site is in the safety envelope of an active range. (MMRP)

YPG-38
LEAD ARSENATE SITE

SITE DESCRIPTION

This unit was closed under a previously approved closure plan. A soil removal was completed in March 1994.

RC March 1994. Clean closure signed off by the state of Arizona.

STATUS

RRSE RATING: NE

CONTAMINANTS:
Inorganics

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA/SI, RI, RA

CURRENT IRP PHASE:
RC

YPG-39
KOFA RANGE (IMPACT AREA)

SITE DESCRIPTION

This is an active military testing training range located east of State Route 95.

This is an active range area. This site is not eligible for IRP funding and is, therefore, response complete under the IRP. 199703

STATUS

RRSE RATING: Low Risk

CONTAMINANTS:
None

MEDIA OF CONCERN:
None

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC

YPG-40
PYROTECHNIC RANGE (IMPACT AREA)

SITE DESCRIPTION

This is an active testing range.

This is an active range area. This site is not eligible for IRP funding and is, therefore, response complete under the IRP. 199703

STATUS

RRSE RATING: NE

CONTAMINANTS:
None

MEDIA OF CONCERN:
None

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC

YPG-41
CIBOLA RANGE (IMPACT AREA)

SITE DESCRIPTION

This is an active military testing and training range located west of State Route 95 and north of Martin Lake Road.

This is an active range area. This site is not eligible for IRP funding and is, therefore, response complete under the IRP. 199703

STATUS

RRSE RATING: NE

CONTAMINANTS:
None

MEDIA OF CONCERN:
None

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC

YPG-43
FORMER FIRE TRAINING PIT

SITE DESCRIPTION

This is an active site that is not used for handling waste.

This is an active range area. This site is not eligible for IRP funding and is, therefore, response complete under the IRP. 199909

STATUS

RRSE RATING: Low Risk

CONTAMINANTS:
None

MEDIA OF CONCERN:
None

COMPLETED IRP PHASE:
PA/SI, RI

CURRENT IRP PHASE:
RC

YPG-44
AMMUNITION DEFLAGRATION SITE

SITE DESCRIPTION

This site is used to perform ammunition deflagration tests. Ammunition is tested in an above ground structure.

This is an active range area. This site is not eligible for IRP funding and is, therefore, response complete under the IRP. 199703

STATUS

RRSE RATING: Low Risk

CONTAMINANTS:
None

MEDIA OF CONCERN:
None

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC

OTHER RC SITES

Site Number	Site Name/Type	RC DATE
YPG-08	RAD Storage at X-Ray Facility (building 3493) /Contaminated Building	198808
YPG-28	Landfill 3 km East of Main Post /Landfill	198808
YPG-29	Landfill East of Route 95, 2 km West of Kofa Range /Landfill	198808

Schedule

PAST MILESTONES BY PHASE:

IRP Phase	Completion Date
Initial Installation Assessment (IA)	1978
Update of IA	July 1988
Preliminary Assessment/ Site Inspection (PA/SI)	August 1988

CURRENT MILESTONES BY PHASE:

IRP Phase	Completion Date
Remedial Investigations/ Feasibility Studies (RI/FS)	December, 2004
Remedial Design (RD) YPG-010	September, 2004
Remedial Action (RAC)	December, 2005

FUTURE MILESTONES BY PHASE:

Remedial Action (RAO)	September, 2008
Projected completion date of all RA:	2006
Projected completion date of IRP:	2016

NO FURTHER ACTION SITES:

YPG-04, Petroleum Laboratory (Bldg. S-2060)
YPG-05, 55 Gal. POL Storage at Petroleum Lab
YPG-06, OB/OD New Demo Area - Kofa East
YPG-07, Mobility Range (General)
* YPG-08, RAD Storage at X-Ray Facility (Bldg. 3493)
YPG-09, RAD Storage Site (Building 3557)
YPG-12, Pesticide Mix/Storage Facility (Bldg 416)
YPG-13A, Septic Tank Lagoon Castle Dome Heliport
YPG-15, Raw Sewage Lagoon System - Main Post
YPG-20, Lagoon at Mobility Test Area
YPG-21, Imhoff Tank at Mobility Test Area
YPG-24, Raw Sewage Lagoons at Kofa Range
* YPG-27, Landfill 5 KM S-SE of Main Post
* YPG-28, Landfill 3km East of Main Post
* YPG-29, Landfill E of Rt. 95, 2 km W of Kofa Range
YPG-30, Landfill 4 KM NW of Kofa Range
YPG-33, Test Site 8 KM W RT95, 4.4 KM SW Cibola Rd.
YPG-34, Test Site NE of Chemical Agent Disposal Area
YPG-35, Old Demo Area (N Base of Muggins Mountains)
YPG-38, Lead Arsenate Site
YPG-39, Kofa Range (Impact Area)
YPG-40, Pyrotechnic Range (Impact Area)
YPG-41, Cibola Range (Impact Area)
YPG-43, Former Fire Training Pit
YPG-44, Ammunition Deflagration Site

*** These are historical sites that could be eligible for IRP.**

U.S. Army Yuma Proving Ground IRP Schedule

Current Phase | Future Phase

AEDB-R #	SITE TITLE	Phase	FY05	FY06	FY07	FY08	FY09	FY10+
YPG-1	Old Chemical Laboratory	RD/RA						
		LTM						
YPG-10	Fuel Bladder Spill Site	RI/FS						
		IRA						
		RD/RA						
		RAO						
		LTM						
YPG-11	Pesticide Mix Storage Facility	RA						
YPG-31	West Environmental Test Storage Area	RA						
		LTM						
YPG-32	Former Waste Disposal Area	RA						
		LTM						
YPG-45	Building 506 UST Release	RA						
		LTM						

REM/IRA/RA Assessment

PAST REM/IRA/RA:

Prior to FY99:
·YPG-38 Lead Arsenate Site, Remedial Action, Mar 94
·YPG-45 Bldg 506 USTFuel Release, Interim Remedial Action, 1992

FY 99
·YPG-10 Fuel Bladder Test Site, IRA
·YPG-32 Former Waste Disposal Area, IRA

FY00
·YPG-10 Fuel Bladder Test Site, IRA
·YPG-32 Former Waste Disposal Area, IRA

FY 01
·YPG-10 Fuel Bladder Test Site, IRA

PRESENT REM/IRA/RA:

FY 04-05
·YPG-10 Fuel Bladder Test Site, SVE
·YPG-31 LUC
·YPG-32 LUC
·YPG-45 Ozone injection (686)
YPG-13B LUC
YPG-13C LUC
YPG-13D LUC
YPG-13E LUC
YPG-13F NFA
YPG-23 LUC
YPG-25 LUC
YPG-26 LUC

FUTURE REM/IRA/RA:

FY 05+
·YPG-10 Fuel Bladder Test Site, SVE operation for source control

Community Involvement

A. Status of Community Involvement

Army guidance has recommended the establishment of Restoration Advisory Boards (RABs) for all installations. Due to the lack of sustained community interest, YPG does not have a RAB. YPG is attempting to form a Technical Review Committee.

B. Determining Interesting in Establishing a RAB

YPG went through the process of determining interest in establishing a RAB in FY99. YPG determined that there is insufficient interest in the local community to establish a RAB.

YPG prepared a draft Community Involvement Plan in April 2000 and a draft brochure for public mailing in July 2000. Both should be finalized in late spring 2002. Information repositories have been created at the YPG library and at the Yuma Public Library. YPG will continue to work to establish a Technical Review Committee in FY03 and continue to have periodic public information meetings.